CLAIMS

1. (currently amended) A method for determining an end point of a plasma etching process using ionized process gases for cleaning etching of a processing chambers that are used for coating or etching processes during the manufacture of semiconductor components, comprising the steps of:

monitoring a DC bias voltage of a plasma generator during a cleaning etching process, wherein the DC bias voltage is the voltage measured between ground and a decoupling electrode of the plasma generator disposed within the processing chamber, and wherein the measured voltage profile has a clear signature of an endpoint of the cleaning etching process;

comparing the DC bias voltage to a predetermined value representing a clean processing chamber; and

terminating the plasma cleaning etching process by disconnecting a supply of process gases and deactivating the plasma generator when said DC bias voltage reaches said predetermined value.

2. (original) The method according to claim 1, wherein the DC bias voltage is measured continuously.

3. (original) The method according to claim 1, wherein the DC bias voltage is measured at discrete intervals.

4. (original) The method according to claim 1, wherein a DC voltage profile of a plasma cleaning etching process is stored.

5. (original) The method according to claim 4, wherein the stored DC voltage profile is compared with a previously stored DC voltage profile.

6. (original) The method according to claim 5, wherein the comparison of the DC voltage profiles is performed for the same process gases and process parameters.

7. (original) The method according to claim 4, wherein a plurality of DC voltage profiles of plasma cleaning etching process are stored.

8. (original) The method according to claim 7, wherein the stored DC voltage profile is compared with a previously stored DC voltage profile.

9. (original) The method according to claim 8, wherein the comparison of the DC voltage profiles is performed for the same process gases and process parameters.

10. (original) The method according to claim 1, wherein termination of the cleaning etching process is delayed for a selected time after said DC bias voltage reaches said predetermined value.